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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2  
12819A LANCE, MISSILE NUMBER 4244, ROUND NUMBER 351 ECL.(U)  
JUN 80

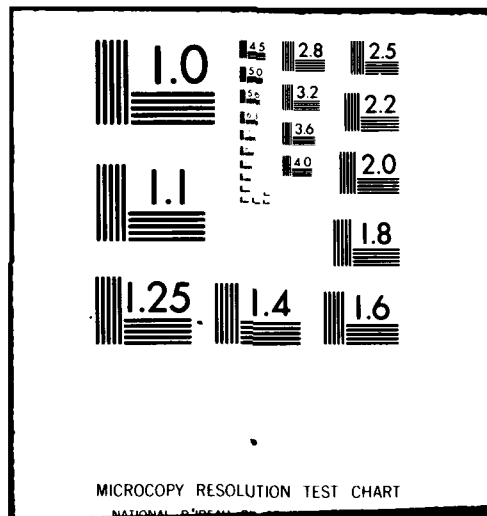
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1. REPORT NUMBER DR-1152	2. GOVT ACCESSION NO. AD-A082644	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 12819A LANCE Missile Number 4244 Round Number 351 ECL		5. TYPE OF REPORT & PERIOD COVERED
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) White Sands Meteorological Team		8. CONTRACT OR GRANT NUMBER(s) DA Task 1F665702D127-02
9. PERFORMING ORGANIZATION NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Research & Development Command Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico 88002		12. REPORT DATE June 1980
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) US Army Electronics Research & Dev Command Adelphi, MD 20783		13. NUMBER OF PAGES
		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)		
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18. SUPPLEMENTARY NOTES		
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  Meteorological data gathered for the launching of the 12819A LANCE, Missile Number 4244, Round Number 351 ECL, presented in tabular form.		

# CONTENTS

	<u>PAGE</u>
INTRODUCTION -----	1
DISCUSSION -----	1
GENERAL AREA MAP -----	2
TABLES:	
1. Surface Observations Taken at 0805 MDT at Spec Site -----	3
2. Spec Site Pilot-Balloon Measured Wind Data at 0737 MDT -----	4
3. Spec Site Pilot-Balloon Measured Wind Data at 0805 MDT -----	5
4. Jallen Site Significant Level Data at 0400 MDT -----	6
5. Jallen Upper Air Data at 0400 MDT -----	8
6. Jallen Mandatory Levels at 0400 MDT -----	13
7. AFSWC Significant Level Data at 0900 MDT -----	14
8. AFSWC Upper Air Data at 0900 MDT -----	16
9. AFSWC Mandatory Levels at 0900 MDT -----	22

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## INTRODUCTION

12819A LANCE, Missile Number 4244, Round Number 351 ECL,  
was launched from Spec Site, White Sands Missile Range (WSMR), New Mexico,  
at 0805:32 MDT on 20 June 1980. The scheduled launch time was  
0730 MDT.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team. Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), Wind direction and speed, and cloud cover were made at the Spec Met Site at T-0 minutes.

(2) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

#### b. Upper Air

(1) Low level wind data were obtained from RPTS T-9 pibal observation at:

### SITE AND ALTITUDE

Spec	0737 MDT	7200 ft AGL
Spec	0805 MDT	8000 ft AGL

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to as high as possible feet in 500-foot increments.

### SITE AND TIME

Jallen	0400 MDT
AFSWC	0900 MDT





TABLE 1. Surface Observations Taken at 0805 MDT,  
20 June 1980, at Spec Site, 12819A LANCE,  
Missile Number 4244, Round Number 351 ECL.

ELEVATION	no survey	FT/MSL
PRESSURE	858.8	MBS
TEMPERATURE	18.9	$^{\circ}\text{C}$
RELATIVE HUMIDITY	33	%
DEW POINT	2.2	$^{\circ}\text{C}$
DENSITY	1020	$\text{GM}/\text{M}^3$
WIND SPEED	01	KTS
WIND DIRECTION	355	DEGREES
CLOUD COVER	2	AC
	2	CI

## PILOT BALLOON MEASURED WIND DATA

TABLE 2

RELEASED FROM Spec Site DATE 20 June 1980 TIME 0737 MDT

COORDINATES (WSTM) X= no survey Y= H=

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHTS ARE METERS AGL OR FEET AGL X .

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
sfc	360	01
100	MISG	MISG
200		CALM
300	080	01
400	070	01
500	105	02
600	120	02
700	125	03
800	130	03
900	145	03
1000	160	03
1100	165	03
1200	170	04
1300	175	04
1400	185	04
1500	200	04
1600	215	04
1700	225	04
1800	230	04
1900	230	05
2000	225	05
2100	225	05
2200	225	06
2300	225	06
2400	225	06
2500	220	06
2600	215	07
2700	220	07
2800	225	07
2900	220	07
3000	220	07

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
3100	215	07
3200	215	07
3300	220	06
3400	225	05
3500	225	04
3600	225	04
3700	225	03
3800	220	03
3900	220	03
4000	220	04
4100	220	02
4200	205	01
4300	145	01
4400	090	01
4500	075	02
4600	075	03
4700	060	03
4800	065	03
4900	065	03
5000	065	03
5100	065	03
5200	070	03
5300	070	03
5400	060	04
5500	055	04
5600	050	04
5700	045	05
5800	045	05
5900	035	04
6000	020	04
6100	025	04

[illegible]

## PILOT BALLOON MEASURED WIND DATA

TABLE 3

RELEASED FROM Spec Site DATE 20 June 1980 TIME 0805 MDT

COORDINATES (WSTM)    X= no survey    Y=    H=

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH.

HEIGHTS ARE METERS AGL OR FEET AGL X .

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
sfc	355	01
100	MISG	MISG
200	055	01
300	115	01
400	125	02
500	145	03
600	155	03
700	165	04
800	175	04
900	165	04
1000	155	04
1100	145	03
1200	135	02
1300	155	02
1400	180	02
1500	200	02
1600	215	02
1700	215	03
1800	215	03
1900	215	04
2000	215	04
2100	220	05
2200	225	06
2300	230	06
2400	235	06
2500	235	06
2600	240	07
2700	240	06
2800	235	05
2900	230	05
3000	225	05

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
3100	225	04
3200	215	04
3300	225	03
3400	235	03
3500	315	02
3600	205	02
3700	170	01
3800	125	01
3900	190	02
4000	210	03
4100	145	01
4200 -	080	03
4300	075	03
4400	075	03
4500	075	03
4600	075	03
4700	075	04
4800	075	04
4900	075	04
5000	070	04
5100	065	04
5200	065	04
5300	060	04
5400	060	04
5500	060	04
5600	060	03
5700	060	03
5800	060	03
5900	050	03
6000	045	03
6100	045	04

[illegible]

STATION ALTITUDE 4051.00 FEET MSL  
20 JUNE 80 0400 HRS MDT  
ASCENSION NO. 168

SIGNIFICANT LEVEL DATA

1720030168

JALLEN

TABLE 4.

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	
878.2 4051.0	23.9	9.9	41.0
868.0 4388.6	27.7	9.0	31.0
850.0 4996.6	26.4	7.4	30.0
795.6 6902.1	23.9	2.1	24.0
700.0 10512.0	14.0	-4.4	37.0
614.4 14067.1	4.3	-3.4	57.0
563.2 16371.7	-2.1	-3.1	93.0
530.8 17912.7	-5.7	-5.8	99.0
500.0 19446.6	-9.1	-9.2	99.0
476.2 20684.3	-11.4	-11.9	96.0
453.4 21918.1	-13.5	-26.0	34.0
446.2 22318.6	-13.7	-26.8	32.0
400.0 25022.9	-19.3	-35.1	23.0
386.9 25834.7	-21.2	-38.6	19.0
375.4 26564.8	-23.1	-35.5	31.0
349.0 28310.9	-26.6	-29.7	75.0
300.0 31841.6	-35.0	-41.2	57.0
278.8 33503.2	-40.4	-48.3	42.0
269.6 34253.6	-42.2	-49.5	44.0
250.0 35917.0	-47.2		
225.8 38112.5	-52.1		
200.0 40690.8	-53.0		
196.0 41118.5	-53.8		
185.2 42326.2	-51.0		
177.4 43245.5	-52.7		
168.4 44353.6	-52.7		
150.0 46786.5	-58.1		
100.0 54857.9	-76.1		
89.4 57020.7	-70.8		
74.0 60708.5	-72.0		
70.0 61797.3	-69.1		
65.6 63094.5	-64.0		

STATION ALTITUDE 4051.00 FEET MSL  
 20 JUNE 80  
 ASCENSION NO. 168 0400 HRS MDT

SIGNIFICANT LEVEL DATA  
 1720030168  
 JALLEN

GEODETIC COORDINATES  
 33.16712 LAT DEG  
 106.49511 LON DEG

TABLE 4 (continued)

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES	DEWPOINT CENTIGRADE	
62.8 63974.9	-65.0		
57.4 65797.1	-62.3		
50.0 68631.7	-59.5		
44.4 71093.2	-58.6		

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

UPPER AIR DATA  
1720030168  
JALLEN

STATION ALTITUDE 4051.00 FEET MSL  
20 JUNE 80  
ASCENSION NO. 168  
0400 HRS MDT

TABLE 5.

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
4051.0	878.2	23.9	41.0	1024.5	673.2	0	0	1.000261
4500.0	864.7	27.5	30.8	997.1	677.1	228.5	.8	1.000270
5000.0	849.4	26.4	30.0	983.9	675.8	228.5	1.7	1.000263
5500.0	835.3	25.7	28.4	969.4	675.0	228.5	2.6	1.000256
6000.0	820.9	25.1	26.8	955.1	674.1	232.3	3.2	1.000249
6500.0	806.8	24.4	25.3	941.1	673.3	275.1	2.7	1.000243
7000.0	792.8	23.6	24.4	927.5	672.3	295.6	3.5	1.000237
7500.0	778.9	22.3	26.2	915.4	670.7	290.2	4.6	1.000235
8000.0	765.2	20.9	28.0	903.5	669.2	287.5	4.8	1.000232
8500.0	751.8	19.5	29.8	891.8	667.6	284.6	4.4	1.000229
9000.0	738.6	18.1	31.6	880.3	666.0	280.4	3.6	1.000226
9500.0	725.6	16.8	33.4	868.9	664.4	278.5	3.5	1.000222
10000.0	712.8	15.4	35.2	857.8	662.9	277.9	3.4	1.000219
10500.0	700.3	14.0	37.0	846.8	661.3	277.1	3.0	1.000216
11000.0	687.6	12.7	39.7	835.4	659.7	271.9	2.4	1.000213
11500.0	675.1	11.3	42.6	824.1	658.1	256.3	1.9	1.000210
12000.0	662.8	9.9	45.4	813.1	656.5	247.6	1.3	1.000207
12500.0	650.8	8.6	48.2	802.2	654.9	253.5	.9	1.000204
13000.0	638.9	7.2	51.0	791.5	653.3	279.8	.9	1.000201
13500.0	627.3	5.8	53.8	780.9	651.7	296.5	1.4	1.000198
14000.0	615.9	4.5	56.6	770.6	650.1	288.1	1.4	1.000195
14500.0	604.4	3.1	63.8	759.9	648.5	260.5	1.1	1.000193
15000.0	593.1	1.7	71.6	749.4	646.9	194.9	1.6	1.000192
15500.0	582.0	.3	79.4	739.1	645.3	187.2	2.7	1.000190
16000.0	571.2	-1.1	87.2	728.9	643.7	191.3	3.6	1.000188
16500.0	560.4	-2.4	93.5	718.8	642.1	208.2	5.8	1.000185
17000.0	549.8	-3.6	95.4	708.2	640.6	217.7	8.0	1.000181
17500.0	539.3	-4.7	97.4	697.9	639.2	225.7	10.2	1.000178
18000.0	529.0	-5.9	99.0	687.6	637.8	229.3	11.4	1.000174
18500.0	518.8	-7.0	99.0	677.3	636.4	231.6	12.2	1.000170
19000.0	508.8	-8.1	99.0	667.1	635.0	233.3	12.7	1.000166
19500.0	498.9	-9.2	98.9	657.0	633.7	235.2	13.2	1.000163

STATION ALTITUDE 4051.00 FEET MSL  
20 JUNE 80  
ASCENSION NO. 108

0400 HRS MDT

UPPER AIR DATA  
1720030168  
JALLEN

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

TABLE 5 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
20000.0	489.2	-10.1	97.7	646.6	632.5	237.7	13.6	1.000159
20500.0	479.7	-11.1	96.4	636.3	631.3	238.6	14.1	1.000156
21000.0	470.3	-11.9	80.1	626.2	630.1	238.0	14.8	1.000150
21500.0	461.0	-12.8	55.0	616.2	628.9	236.1	15.7	1.000144
22000.0	451.9	-13.5	33.6	606.1	627.9	233.7	16.7	1.000139
22500.0	442.9	-14.1	31.4	595.3	627.2	231.7	17.4	1.000136
23000.0	434.1	-15.1	28.8	585.7	626.0	229.9	18.0	1.000134
23500.0	425.4	-16.1	28.1	576.4	624.7	234.1	19.0	1.000131
24000.0	416.9	-17.2	26.4	567.2	623.4	238.6	20.0	1.000129
24500.0	408.5	-18.2	24.7	558.1	622.1	248.9	22.8	1.000126
25000.0	400.4	-19.3	23.1	549.2	620.8	249.9	26.0	1.000124
25500.0	392.2	-20.4	20.6	540.5	619.4	251.5	29.9	1.000122
26000.0	384.3	-21.6	21.7	532.1	617.9	252.4	33.9	1.000120
26500.0	376.4	-22.9	29.9	523.9	616.3	248.4	34.0	1.000118
27000.0	368.6	-24.0	42.0	515.2	615.1	244.4	33.7	1.000117
27500.0	361.0	-25.0	54.6	506.5	613.9	239.4	31.3	1.000116
28000.0	353.6	-26.0	67.2	498.0	612.6	234.9	29.8	1.000114
28500.0	346.2	-27.1	74.0	489.9	611.3	232.6	29.5	1.000112
29000.0	338.8	-28.4	71.5	482.1	609.6	230.1	29.7	1.000110
29500.0	331.7	-29.7	68.9	474.4	608.0	227.6	30.5	1.000108
30000.0	324.6	-31.0	66.4	466.9	606.3	224.3	31.1	1.000106
30500.0	317.8	-32.3	63.8	459.5	604.7	220.2	31.7	1.000104
31000.0	311.0	-33.6	61.3	452.2	603.0	218.2	32.6	1.000102
31500.0	304.4	-34.9	58.7	445.0	601.4	218.0	33.8	1.000100
32000.0	297.9	-36.2	55.6	438.0	599.7	219.3	35.1	1.000099
32500.0	291.4	-37.6	51.1	431.0	597.9	221.6	36.5	1.000097
33000.0	285.1	-39.0	46.5	424.1	596.2	224.4	37.0	1.000095
33500.0	278.8	-40.4	42.0	417.3	594.4	227.3	37.2	1.000093
34000.0	272.7	-41.6	43.3	410.2	592.9	224.6	37.3	1.000092
34500.0	266.6	-42.9	37.5**	403.4	591.1	221.8	37.3	1.000090
35000.0	260.6	-44.4	24.3**	397.0	589.2	222.9	37.0	1.000089
35500.0	254.8	-45.9	11.0**	390.6	587.2	225.5	37.4	1.000087

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.



STATION ALTITUDE 4051.00 FEET MSL  
20 JUNE 80  
ASCENSION NO. 168

UPPER AIR DATA  
1720030168  
JALLEN

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

TABLE 5 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (DEGREES TN)	SPEED KNOTS	INDEX OF REFRACTION
36000.0	249.0	-47.4		384.3	585.4	231.2	39.9	1.000086
36500.0	243.3	-48.5		377.3	583.9	234.6	42.4	1.000084
37000.0	237.8	-49.6		370.5	582.5	236.2	44.7	1.000083
37500.0	232.3	-50.7		363.9	581.0	240.3	45.8	1.000081
38000.0	227.0	-51.8		357.3	579.5	246.8	46.1	1.000080
38500.0	221.7	-52.4		349.8	578.9	252.2	47.4	1.000078
39000.0	216.6	-52.7		342.2	578.4	256.2	49.6	1.000076
39500.0	211.5	-53.0		334.7	578.0	259.5	51.0	1.000075
40000.0	206.6	-53.3		327.4	577.6	262.2	51.0	1.000073
40500.0	201.8	-53.7		320.3	577.2	265.3	50.7	1.000071
41000.0	197.1	-53.8		313.0	577.0	269.9	49.0	1.000070
41500.0	192.5	-53.9		304.5	578.1	274.7	47.5	1.000068
42000.0	188.1	-51.8		295.9	579.7	279.2	45.9	1.000066
42500.0	183.7	-51.3		288.5	580.2	284.1	44.7	1.000064
43000.0	179.5	-52.2		283.0	579.0	288.8	45.3	1.000063
43500.0	175.3	-52.7		277.0	578.4	293.4	46.3	1.000062
44000.0	171.2	-52.7		270.6	578.4	296.9	48.0	1.000060
44500.0	167.2	-53.0		264.7	578.0	300.1	49.6	1.000059
45000.0	163.3	-54.1		259.7	576.5	302.9	48.3	1.000058
45500.0	159.5	-55.2		254.9	575.1	305.8	47.1	1.000057
46000.0	155.7	-56.4		250.2	573.6	307.1	44.2	1.000056
46500.0	152.1	-57.5		245.6	572.1	308.1	40.9	1.000055
47000.0	148.4	-58.6		240.9	570.7	307.9	38.5	1.000054
47500.0	144.7	-59.7		236.2	569.2	306.4	37.0	1.000053
48000.0	141.1	-60.8		231.5	567.7	304.0	34.9	1.000052
48500.0	137.6	-61.9		227.0	566.2	296.8	31.2	1.000051
49000.0	134.2	-63.0		222.5	564.7	287.8	28.1	1.000050
49500.0	130.9	-64.2		218.2	563.2	279.0	26.3	1.000049
50000.0	127.6	-65.3		213.9	561.7	269.9	25.3	1.000048
50500.0	124.5	-66.4		209.7	560.2	261.3	24.9	1.000047
51000.0	121.4	-67.5		205.6	558.7	257.5	24.7	1.000046
51500.0	118.4	-68.6		201.6	557.2	253.7	24.7	1.000045

STATION ALTITUDE 4051.00 FEET MSL  
20 JUNE 80  
ASCENSION NO. 168 0400 HRS MDT

UPPER AIR DATA  
1720030168  
JALLEN

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

TABLE 5 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
52000.0	115.4	-69.7		197.7	555.6	248.5	24.4	1.000044
52500.0	112.6	-70.8		193.8	554.1	241.0	24.0	1.000043
53000.0	109.8	-72.0		190.1	552.6	233.4	24.0	1.000042
53500.0	107.1	-73.1		186.4	551.1	234.6	23.9	1.000042
54000.0	104.4	-74.2		182.8	549.5	239.9	23.8	1.000041
54500.0	101.8	-75.3		179.3	548.0	247.1	23.4	1.000040
55000.0	99.3	-75.8		175.2	547.4	263.2	22.0	1.000039
55500.0	96.7	-74.5		169.7	549.0	280.0	22.5	1.000038
56000.0	94.3	-73.3		164.3	550.7	298.5	20.5	1.000037
56500.0	91.8	-72.1		159.1	552.4	321.1	19.8	1.000035
57000.0	89.5	-70.9		154.1	554.1	340.1	20.7	1.000034
57500.0	87.2	-71.0		150.3	554.0	352.3	18.0	1.000033
58000.0	85.0	-71.1		146.6	553.7	7.9	16.4	1.000033
58500.0	82.9	-71.3		143.0	553.5	18.8	14.8	1.000032
59000.0	80.8	-71.4		139.5	553.3	23.2	12.0	1.000031
59500.0	78.7	-71.6		136.1	553.1	30.2	9.4	1.000030
60000.0	76.7	-71.8		132.7	552.8	27.7	8.5	1.000030
60500.0	74.8	-71.9		129.5	552.6	19.7	8.5	1.000029
61000.0	72.9	-71.2		125.8	553.6	12.2	8.3	1.000028
61500.0	71.1	-69.9		121.8	555.4	5.5	7.0	1.000027
62000.0	69.3	-68.3		117.8	557.6	355.9	5.8	1.000026
62500.0	67.6	-66.3		113.8	560.3	8.3	5.0	1.000025
63000.0	65.9	-64.4		110.0	562.9	31.7	4.8	1.000024
63500.0	64.3	-64.5		107.3	562.8	50.9	5.9	1.000024
64000.0	62.7	-63.0		105.0	562.1	58.2	8.5	1.000023
64500.0	61.2	-64.2		102.0	563.1	62.0	11.2	1.000023
65000.0	59.7	-63.5		99.2	564.1	63.3	11.1	1.000022
65500.0	58.2	-62.7		96.4	565.1	64.6	10.8	1.000021
66000.0	56.8	-62.1		93.8	566.0	68.7	11.1	1.000021
66500.0	55.5	-61.6		91.3	566.6	73.6	11.8	1.000020
67000.0	54.1	-61.1		88.9	567.3	74.4	12.4	1.000020
67500.0	52.8	-60.6		86.6	567.9	71.3	12.9	1.000019

STATION ALTITUDE 4031.00 FEET MSL  
20 JUNE 80 0400 HRS MDT  
ASCENSION NO. 162

UPPER AIR DATA  
1720030168  
JALLEN

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LONG DEG

TABLE 5 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
6000.0	51.6	-60.1		84.3	568.6	68.2	13.6	1.000019
6500.0	50.3	-59.6		82.1	569.3	64.7	14.9	1.000018
6900.0	49.1	-59.4		80.0	569.6	61.7	16.3	1.000018
6950.0	47.9	-59.2		78.1	569.9			1.000017
7000.0	46.8	-59.0		76.1	570.1			1.000017
7050.0	45.7	-58.8		74.3	570.3			1.000017
7100.0	44.6	-58.6		72.4	570.6			1.000016

STATION ALTITUDE 4051.00 FEET MSL  
 28 JUNE 88  
 ASCENSION NO. 168 0400 HRS MDT

MANDATORY LEVELS  
 1720030168  
 JALLEN

GEODETTIC COORDINATES  
 33.16712 LAT DEG  
 106.49511 LON DEG

TABLE 6.

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	4993.	26.4	7.4	30.	228.5	1.7	
800.0	6739.	24.1	2.6	25.	295.5	3.0	
750.0	8574.	19.3	1.3	30.	284.0	4.3	
700.0	10502.	14.0	-4	37.	277.1	3.0	
650.0	12534.	8.5	-1.8	48.	255.1	.9	
600.0	14644.	2.6	-3.0	67.	228.4	1.1	
550.0	16970.	-3.5	-4.2	95.	217.4	7.9	
500.0	19427.	-9.1	-9.2	99.	234.9	13.2	
450.0	22074.	-13.6	-26.3	33.	233.3	16.9	
400.0	24902.	-19.3	-35.1	23.	250.0	26.1	
350.0	28192.	-26.5	-29.8	73.	233.9	29.7	
300.0	31779.	-35.8	-41.2	57.	218.4	34.6	
250.0	35840.	-47.2			230.1	39.4	
200.0	40594.	-53.8			266.9	50.0	
175.0	43426.	-52.7			293.5	46.4	
150.0	46682.	-50.1			308.6	39.3	
125.0	50359.	-66.2			261.5	24.9	
100.0	54690.	-76.1			257.7	22.3	
80.0	58997.	-71.5			25.1	11.1	
70.0	61508.	-69.1			.7	6.4	
60.0	64667.	-63.6			63.0	11.2	
50.0	68377.	-59.5			64.0	15.2	

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4700.63 FEET MSL  
20 JUNE 80  
ASCENSION NO. 8

SIGNIFICANT LEVEL DATA  
1720170000  
AFSWC

TABLE 7.

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	
860.8	29.1	7.7	26.0
850.0	26.8	6.8	28.0
780.0	13.7	-3.1	31.0
644.4	8.0	-7.3	33.0
574.2	-1.1	-8.0	55.0
500.0	-8.7	-14.1	65.0
474.0	-12.2	-18.5	59.0
445.6	-15.3	-17.7	82.0
436.1	-15.9	-21.1	64.0
423.6	-17.1	-25.5	48.0
400.0	-20.5	-32.5	33.0
385.7	-22.5	-30.2	49.0
360.2	-25.7	-38.1	30.0
327.8	-31.2	-43.3	29.0
300.0	-35.8	-48.0	27.0
289.0	-38.2	-49.8	28.0
250.0	-46.3		
219.0	-49.4		
200.0	-48.1		
191.6	-46.7		
150.0	-58.9		
126.0	-65.7		
122.4	-65.2		
103.4	-72.1		
100.0	-71.8		
86.8	-67.4		
72.8	-64.9		
70.0	-62.5		
64.6	-58.6		
40.8	-57.1		
31.8	-49.2		
30.0	-48.8		

STATION ALTITUDE 4700.63 FEET MSL  
 20 JUNE 80  
 ASCENSION NO. 0 0900 HRS MDT

SIGNIFICANT LEVEL DATA  
 1720170008  
 AFSWC

GEODETTIC COORDINATES  
 33.64686 LAT DEG  
 106.58581 LON DEG

TABLE 7 (continued)

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES CENTIGRADE	DEWPOINT DEGREES CENTIGRADE	
26.2 82869.4	-50.7		
20.7 88005.8	-45.8		

STATION ALTITUDE 4700.43 FEET MSL  
20 JUNE 60  
ASCENSION NO. 8 0900 HRS MDT

UPPER AIR DATA  
1720170008  
AFSWC

TABLE 8.

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (DEGREES TRUE)	SPEED KNOTS	INDEX OF REFRACTION
4700.6	860.0	29.1	7.7	987.6	678.9	0	0	1.000264
5000.0	852.0	27.2	6.9	983.7	676.7	246.2	.7	1.000261
5500.0	837.1	25.8	6.0	971.5	675.0	246.2	1.9	1.000256
6000.0	822.5	24.6	5.1	958.5	673.6	246.2	3.1	1.000251
6500.0	808.1	23.4	4.3	945.6	672.2	247.0	4.0	1.000246
7000.0	794.0	22.2	3.4	933.0	670.8	249.3	4.3	1.000242
7500.0	780.1	21.0	2.5	920.6	669.4	247.5	3.2	1.000237
8000.0	766.4	19.8	1.6	908.3	667.9	233.4	1.3	1.000233
8500.0	753.0	18.6	.7	896.2	666.5	139.4	.4	1.000228
9000.0	739.8	17.4	-.2	884.2	665.1	85.2	1.1	1.000224
9500.0	726.9	16.2	-1.1	872.5	663.7	78.4	1.4	1.000220
10000.0	714.2	15.1	-2.1	860.9	662.3	89.6	2.1	1.000216
10500.0	701.7	13.9	-3.0	849.4	660.9	100.1	3.0	1.000212
11000.0	689.0	12.6	-3.9	837.9	659.4	116.6	4.1	1.000208
11500.0	676.6	11.4	-4.8	826.5	657.9	127.7	5.2	1.000204
12000.0	664.3	10.1	-5.7	815.2	656.4	136.2	6.2	1.000200
12500.0	652.3	8.8	-6.6	804.1	654.9	143.1	7.2	1.000197
13000.0	640.4	7.6	-7.2	793.1	653.4	152.2	8.0	1.000194
13500.0	628.6	6.3	-7.1	782.0	651.9	165.3	8.7	1.000192
14000.0	616.4	4.9	-7.1	771.1	650.4	181.1	8.7	1.000189
14500.0	605.5	3.6	-7.2	760.4	648.8	198.7	8.9	1.000187
15000.0	594.3	2.3	-7.4	749.9	647.3	222.1	8.6	1.000185
15500.0	583.3	1.0	-7.7	739.5	645.8	242.2	9.6	1.000182
16000.0	572.4	-.3	-8.2	729.2	644.2	255.6	11.4	1.000179
16500.0	561.5	-1.5	-9.0	718.5	642.8	260.6	13.2	1.000176
17000.0	550.7	-2.7	-9.8	708.0	641.3	262.0	14.6	1.000173
17500.0	540.2	-3.9	-10.6	697.6	639.9	263.9	17.4	1.000170
18000.0	529.4	-5.1	-11.5	687.4	638.4	265.5	20.2	1.000167
18500.0	519.0	-6.3	-12.3	677.4	637.0	267.5	24.1	1.000164
19000.0	509.4	-7.5	-13.2	667.5	635.5	268.7	27.5	1.000161
19500.0	500.1	-8.7	-14.1	657.0	634.0	268.5	29.5	1.000158
20000.0	490.4	-10.0	-15.7	648.2	632.4	267.9	30.5	1.000154

STATION ALTITUDE 4700-63 FEET MSL  
20 JUNE 80  
ASCENSION NO. 8

UPPER AIR DATA  
1720170008  
AFSWC

GEODETIC COORDINATES  
33.64686 LAT DEG  
106.58581 LON DEG

TABLE 8 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
20500.0	480.8	-11.3	60.6	638.8	630.8	266.7	29.9	1.000151
21000.0	471.3	-12.5	61.1	629.2	629.3	264.9	29.1	1.000148
21500.0	462.0	-13.5	61.5	619.1	628.2	262.1	27.9	1.000146
22000.0	452.9	-14.5	76.0	609.2	627.0	260.1	26.6	1.000144
22500.0	443.4	-15.4	78.8	599.2	625.8	259.4	25.1	1.000142
23000.0	435.1	-16.0	82.7	588.8	625.0	258.6	22.6	1.000137
23500.0	426.4	-16.8	51.6	579.0	623.9	257.7	19.7	1.000134
24000.0	417.8	-17.9	44.4	569.9	622.6	253.8	17.9	1.000131
24500.0	409.3	-19.1	39.0	561.1	621.1	249.5	16.8	1.000128
25000.0	401.1	-20.3	33.7	552.5	619.5	250.0	18.5	1.000125
25500.0	392.9	-21.5	40.9	543.6	618.2	250.9	20.5	1.000124
26000.0	384.9	-22.6	48.4	534.9	616.8	252.2	23.1	1.000122
26500.0	377.0	-23.6	42.6	526.0	615.6	252.6	25.2	1.000120
27000.0	369.2	-24.5	36.8	517.2	614.4	252.6	27.1	1.000117
27500.0	361.6	-25.5	31.1	508.6	613.1	252.4	29.2	1.000115
28000.0	354.0	-26.7	29.8	500.3	611.6	252.1	31.2	1.000113
28500.0	346.6	-27.9	29.6	492.3	610.1	250.6	32.8	1.000111
29000.0	339.3	-29.2	29.4	484.5	608.6	248.7	34.2	1.000109
29500.0	332.2	-30.4	29.1	476.7	607.0	246.0	34.9	1.000107
30000.0	325.2	-31.6	28.8	469.0	605.5	242.8	35.2	1.000105
30500.0	318.2	-32.7	28.3	461.1	604.1	238.8	34.7	1.000103
31000.0	311.4	-33.9	27.8	453.3	602.7	233.8	33.6	1.000102
31500.0	304.8	-35.0	27.4	445.7	601.3	228.9	33.1	1.000100
32000.0	298.2	-36.2	27.2	438.4	599.7	224.3	33.0	1.000098
32500.0	291.7	-37.6	27.7	431.4	597.9	221.6	33.6	1.000097
33000.0	285.3	-38.9	25.5**	424.3	596.3	220.6	34.7	1.000095
33500.0	279.0	-40.2	21.2**	417.1	594.7	220.8	35.5	1.000093
34000.0	272.8	-41.4	16.9**	410.1	593.0	221.8	36.0	1.000092
34500.0	266.7	-42.7	12.5**	403.2	591.4	223.9	36.4	1.000090
35000.0	260.8	-43.9	8.2**	396.4	589.8	226.4	36.8	1.000088
35500.0	255.0	-45.2	3.8**	389.7	588.2	228.6	37.7	1.000087
36000.0	249.4	-46.4		383.0	586.7	230.6	38.7	1.000085

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.



UPPER AIR DATA  
1720170008  
AFSWC

STATION ALTITUDE 4700.63 FEET MSL  
20 JUNE 80  
ASCENSION NO. 8

0900 HRS MDT

GEODETTIC COORDINATES  
33.64686 LAT DEG  
106.58581 LON DEG

TABLE 8 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
36500.0	243.7	-46.9		375.2	586.0	232.8	39.3	1.000084
37000.0	238.1	-47.5		367.6	585.2	235.0	39.8	1.000082
37500.0	232.7	-48.0		360.1	584.5	237.9	39.9	1.000080
38000.0	227.4	-48.6		352.8	583.8	241.1	39.8	1.000079
38500.0	222.3	-49.1		345.6	583.1	243.2	39.8	1.000077
39000.0	217.2	-49.2		337.9	583.0	250.0	40.0	1.000075
39500.0	212.2	-48.9		329.7	583.4	255.2	40.3	1.000073
40000.0	207.4	-48.6		321.8	583.8	261.0	40.9	1.000072
40500.0	202.7	-48.3		314.0	584.2	266.6	41.8	1.000070
41000.0	198.0	-47.8		306.1	584.8	270.3	42.5	1.000068
41500.0	193.6	-47.0		298.2	585.8	273.9	43.4	1.000066
42000.0	189.1	-47.4		291.8	585.4	277.1	43.9	1.000065
42500.0	184.7	-48.5		286.5	583.9	280.2	44.2	1.000064
43000.0	180.4	-49.7		281.3	582.4	282.4	44.4	1.000063
43500.0	176.2	-50.9		276.2	580.8	283.6	44.2	1.000062
44000.0	172.1	-52.0		271.2	579.3	284.7	44.0	1.000060
44500.0	168.1	-53.2		266.3	577.8	285.8	43.8	1.000059
45000.0	164.2	-54.4		261.5	576.2	287.0	43.6	1.000058
45500.0	160.4	-55.6		256.8	574.7	288.2	42.9	1.000057
46000.0	156.7	-56.7		252.2	573.1	289.5	41.8	1.000056
46500.0	153.1	-57.9		247.7	571.6	290.8	40.8	1.000055
47000.0	149.5	-59.0		243.2	570.1	292.1	38.0	1.000054
47500.0	145.8	-60.0		238.4	568.8	293.5	35.4	1.000053
48000.0	142.3	-61.0		233.6	567.5	294.0	32.7	1.000052
48500.0	138.4	-61.9		229.0	566.2	293.7	30.0	1.000051
49000.0	135.5	-62.9		224.5	564.9	293.2	27.3	1.000050
49500.0	132.2	-63.8		220.0	563.6	285.2	26.0	1.000049
50000.0	129.0	-64.8		215.7	562.4	276.0	25.5	1.000048
50500.0	125.9	-65.7		211.4	561.1	267.5	25.9	1.000047
51000.0	122.8	-66.3		205.7	561.7	262.2	27.7	1.000046
51500.0	119.7	-66.2		201.5	560.4	257.5	29.7	1.000045
52000.0	116.7	-67.4		197.6	558.8	257.1	30.9	1.000044

UPPER AIR DATA  
1720170008  
AFSWC

STATION ALTITUDE 4700.63 FEET MSL  
20 JUNE 80 0900 HRS MDT  
ASCENSION NO. 8

GEODETIC COORDINATES  
33.64686 LAT DEG  
106.58561 LON DEG

TABLE 8 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARMS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
52500.0	113.8	-68.6			193.8	557.2	260.8	31.1	1.000043
53000.0	111.0	-69.7			190.0	555.6	264.4	31.5	1.000042
53500.0	108.2	-70.9			186.3	554.0	271.6	31.8	1.000041
54000.0	105.5	-72.1			182.7	552.4	280.5	32.7	1.000041
54500.0	102.8	-72.0			178.0	552.6	288.6	34.4	1.000040
55000.0	100.2	-71.8			173.4	552.8	298.2	31.9	1.000039
55500.0	97.7	-71.1			168.4	553.8	309.5	29.9	1.000038
56000.0	95.2	-70.3			163.5	554.9	321.5	28.2	1.000036
56500.0	92.8	-69.5			158.8	556.0	333.4	23.0	1.000035
57000.0	90.5	-68.7			154.2	557.0	351.1	19.2	1.000034
57500.0	88.2	-67.9			149.8	558.1	6.1	16.5	1.000033
58000.0	86.0	-67.3			145.6	559.0	12.1	12.4	1.000032
58500.0	83.9	-66.9			141.7	559.5	23.8	8.5	1.000032
59000.0	81.8	-66.6			138.0	559.9	39.3	7.0	1.000031
59500.0	79.8	-66.2			134.4	560.4	48.5	7.5	1.000030
60000.0	77.9	-65.9			130.8	560.9	56.4	8.1	1.000029
60500.0	75.9	-65.5			127.4	561.4	57.6	8.9	1.000028
61000.0	74.1	-65.1			124.0	561.9	55.0	9.7	1.000028
61500.0	72.2	-64.4			120.6	562.8	52.7	10.5	1.000027
62000.0	70.5	-62.9			116.8	564.9	52.0	11.0	1.000026
62500.0	68.8	-61.6			113.3	566.6	51.5	11.4	1.000025
63000.0	67.1	-60.5			109.9	568.2	52.3	12.3	1.000024
63500.0	65.5	-59.3			106.7	569.7	57.0	14.5	1.000024
64000.0	63.9	-58.6			103.8	570.7	60.4	16.8	1.000023
64500.0	62.4	-58.5			101.3	570.8	67.7	17.4	1.000023
65000.0	61.0	-58.4			98.9	570.9	79.7	17.0	1.000022
65500.0	59.5	-58.3			96.5	571.0	91.7	17.4	1.000021
66000.0	58.1	-58.3			94.2	571.1	104.0	17.3	1.000021
66500.0	56.7	-58.2			91.9	571.2	116.4	17.7	1.000020
67000.0	55.4	-58.1			89.7	571.3	127.8	18.9	1.000020
67500.0	54.1	-58.0			87.5	571.4	130.0	17.6	1.000019
68000.0	52.8	-57.9			85.4	571.5	131.4	15.9	1.000019

STATION ALTITUDE 4700.63 FEET MSL  
20 JUNE 80 0900 HRS MDT  
ASCENSION NO. 8

UPPER AIR DATA  
1720170008  
AFSWC

GEODETIC COORDINATES  
33.64686 LAT DEG  
106.58581 LON DEG

TABLE 8 (continued)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
68500.0	51.5	-57.9		83.4	571.6	132.7	14.3	1.000019
69000.0	50.3	-57.8		81.4	571.7	128.2	13.5	1.000018
69500.0	49.1	-57.7		79.4	571.8	123.2	12.8	1.000018
70000.0	47.9	-57.6		77.5	571.9	117.9	12.3	1.000017
70500.0	46.8	-57.5		75.6	572.0	113.4	12.5	1.000017
71000.0	45.7	-57.5		73.8	572.1	109.1	12.8	1.000016
71500.0	44.6	-57.4		72.0	572.2	105.3	13.1	1.000016
72000.0	43.6	-57.3		70.3	572.3	102.8	13.5	1.000016
72500.0	42.5	-57.2		68.6	572.4	100.4	14.0	1.000015
73000.0	41.5	-57.2		67.0	572.6	98.6	14.4	1.000015
73500.0	40.5	-56.9		65.3	572.9	98.0	14.9	1.000015
74000.0	39.6	-56.2		63.6	573.9	97.5	15.4	1.000014
74500.0	38.7	-55.4		61.9	574.9	96.8	15.9	1.000014
75000.0	37.8	-54.7		60.2	575.8	95.6	16.4	1.000013
75500.0	36.9	-53.9		58.6	576.8	94.5	16.8	1.000013
76000.0	36.1	-53.2		57.1	577.8	93.8	17.4	1.000013
76500.0	35.2	-52.4		55.6	578.8	94.4	18.0	1.000012
77000.0	34.4	-51.7		54.1	579.8	94.8	18.6	1.000012
77500.0	33.6	-50.9		52.7	580.7	94.7	19.7	1.000012
78000.0	32.8	-50.2		51.3	581.7	92.9	21.9	1.000011
78500.0	32.1	-49.5		49.9	582.7	91.5	24.1	1.000011
79000.0	31.3	-49.1		48.7	583.1	90.4	26.2	1.000011
79500.0	30.6	-48.9		47.6	583.3	89.6	27.5	1.000011
80000.0	29.9	-48.8		46.5	583.5	88.9	28.8	1.000010
80500.0	29.2	-49.2		45.5	583.0	88.4	29.9	1.000010
81000.0	28.6	-49.5		44.5	582.6	89.0	29.7	1.000010
81500.0	27.9	-49.8		43.5	582.2	89.7	29.5	1.000010
82000.0	27.3	-50.1		42.6	581.8	90.3	29.2	1.000009
82500.0	26.7	-50.5		41.7	581.4	90.9	28.5	1.000009
83000.0	26.0	-50.6		40.8	581.2	91.5	27.8	1.000009
83500.0	25.5	-50.1		39.8	581.8	92.1	27.1	1.000009
84000.0	24.9	-49.6		38.8	582.5	90.4	26.6	1.000009

STATION ALTITUDE 4700.63 FEET MSL  
20 JUNE 80 0900 HRS MDT  
ASCENSION NO. 6

UPPER AIR DATA  
1720170008  
AFSWC

TABLE 8 (continued)

GEODETIC COORDINATES  
33.64686 LAT DEG  
106.58581 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
84500.0	24.5	-49.1		37.8	583.1	88.8	26.1	1.000008
85000.0	23.8	-48.7		36.9	583.7	87.0	25.8	1.000008
85500.0	23.2	-48.2		36.0	584.3	85.0	27.1	1.000008
86000.0	22.7	-47.7		35.1	584.9	83.2	28.6	1.000008
86500.0	22.2	-47.2		34.2	585.6			1.000008
87000.0	21.7	-46.8		33.4	586.2			1.000007
87500.0	21.2	-46.3		32.5	586.8			1.000007
88000.0	20.7	-45.8		31.7	587.4			1.000007

STATION ALTITUDE 4700.63 FEET MSL  
 20 JUNE 80 0900 HRS MDT  
 ASCENSION NO. 0

MANDATORY LEVELS  
 1720170008  
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GEODETIC COORDINATES  
 33.64686 LAT DEG  
 106.58581 LON DEG

TABLE 9.

PRESSURE GEOPOTENTIAL MILLIBARS	FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
				DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5065.	26.8	28.	246.2	.9
800.0	6807.	22.7	29.	248.5	4.2
750.0	8635.	18.4	30.	104.0	.6
700.0	10558.	13.7	31.	102.8	3.1
650.0	12588.	8.6	33.	144.2	7.4
600.0	14738.	3.0	47.	210.1	8.6
550.0	17027.	-2.8	58.	262.1	15.0
500.0	19481.	-8.7	65.	268.5	29.5
450.0	22129.	-14.8	78.	259.9	26.1
400.0	25027.	-20.5	33.	250.1	18.7
350.0	28226.	-27.4	30.	251.6	32.2
300.0	31803.	-35.8	27.	225.7	33.0
250.0	35868.	-46.3		230.3	38.5
200.0	40691.	-48.1		268.6	42.2
175.0	43574.	-51.2		283.9	44.1
150.0	46805.	-58.9		291.8	38.5
125.0	50497.	-65.6		266.2	26.3
100.0	54872.	-71.8		298.5	31.8
80.0	59258.	-66.2		47.2	7.4
70.0	61929.	-62.5		51.9	11.1
60.0	65093.	-58.4		86.9	17.1
50.0	68862.	-57.8		127.4	13.4
40.0	73489.	-56.5		97.7	15.2
30.0	79601.	-48.8		89.0	28.6
25.0	83513.	-49.7		90.9	26.7

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.